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# Weekly Payroll Jobs methodology

Reference period Week ending 13 April 2024

Released 9/05/2024

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## How data are collected

### Source

The Australian Taxation Office (ATO) receives payroll information from employers with Single Touch Payroll (STP) enabled payroll and accounting software each time the employer runs its payroll. The ATO provides selected employer and job level data items from the STP system to the ABS to produce statistics.

### Scope and coverage

The scope and coverage of these estimates are defined and constrained by the characteristics of the data sources from which these estimates are produced. As such, users should note that not all jobs in the Australian labour market are captured within these estimates.

### Payroll jobs

Payroll jobs as reported to the ATO through STP are in scope of these estimates. All payroll jobholders regardless of age or Australian residency status are included. Persons reported via STP must hold either a Tax File Number (TFN) or an Australian Business Number (ABN).

A payroll job is a relationship between an employee and their employing enterprise, where the employee is paid in the reference week through STP-enabled payroll or accounting software and reported to the ATO. Where an employee is paid other than weekly, the established payment pattern is used to include payroll jobs paid in weeks outside the reference week.

A payroll job exists when a payment has been received for the reference period. Payments may relate to one or more of the following:

- salary payments and allowances,

- labour hire payments and foreign income,
- the value of payments in kind (where a fringe benefit amount is recorded),
- bonuses where they are reported in the same field as normal payments.

Payroll jobs reported via STP exclude owner managers of unincorporated enterprises (OMUEs), which are more prevalent in the Construction and Agriculture, forestry and fishing industries.

Employers with 20 or more employees (large employers) commenced transition to STP reporting on 1 July 2018. Employers with less than 20 employees (small employers) began transitioning to STP on 1 July 2019. Any reporting concessions that were made available for small employers ended on 30 June 2021. From 01 July 2021 almost all large employers and eligible small employers are reporting through STP.

In addition, payroll jobs reported in the Defence Industry (ANZSIC Class 7600) are excluded from these estimates by the ABS to better align with other [Labour estimates \(https://www.abs.gov.au/statistics/detailed-methodology-information/concepts-sources-methods/labour-statistics-concepts-sources-and-methods/2023/methods-four-pillars-labour-statistics/australian-labour-account#labour-account-concepts\)](https://www.abs.gov.au/statistics/detailed-methodology-information/concepts-sources-methods/labour-statistics-concepts-sources-and-methods/2023/methods-four-pillars-labour-statistics/australian-labour-account#labour-account-concepts).

## Other data sources

The STP data are enhanced through combining other administrative data held by the ABS (also sourced from the Australian taxation system).

Sex, age and residential state/territory variables are primarily sourced from Client Register data (supplied by ATO to the ABS as part of the transfer of Personal Income Tax data). Sex can only be sourced from Client Register data. When age and residential state/territory are not available from Client Register data, they are sourced from STP data. In previous years, annual snapshots of Client Register data were periodically used to refresh job holder variables. In the current Weekly Payroll Jobs system and processes, updating the client register snapshot is no longer possible. See the Updating characteristic variables section of [How data are processed \(/methodologies/weekly-payroll-jobs-methodology/week-ending-13-april-2024#how-data-are-processed\)](/methodologies/weekly-payroll-jobs-methodology/week-ending-13-april-2024#how-data-are-processed).

Industry of activity, sector and employment size variables of the employing business are sourced from the ABS Business Register (ABSBR). Variables from the ABSBR are updated periodically. See the Updating characteristic variables section of [How data are processed \(/methodologies/weekly-payroll-jobs-methodology/week-ending-13-april-2024#how-data-are-processed\)](/methodologies/weekly-payroll-jobs-methodology/week-ending-13-april-2024#how-data-are-processed).

## How data are processed

To produce estimates from STP data, several processes and treatments are applied.

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### Calendarisation

A payroll job exists when a payment has been received in the reference period. The STP data are reported on a cash basis (the time when the payment was made) rather than an accrual basis (the time when the payment was earned). Production of real time estimates require the conversion of STP data from a cash basis to an accrual basis. This is done through a “calendarisation” method. This method breaks down all records to a common period (daily), which allows the data to be aggregated and analysed for any longer period (e.g. weekly).

The calendarisation method includes the following steps:

- calculation of the periodicity (payment frequency) using the start and end date of the payment period,
- calculation of a daily pay rate by dividing the total payments by the payment frequency (for example, weekly pay is divided by seven), and

- an adjustment to the periodicity for a job to exclude the days before commencement (or after termination), where the start or termination date for a job occurs within the payment period.

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## Imputation

In addition to cash reporting, extracted STP payment data for a specific week cycle may be incomplete due to:

- different business reporting habits,
- different pay frequencies, and
- the lag between the reference week and the release of estimates.

To produce reliable weekly statistics, an imputation method is applied to account for incompleteness. Imputation includes the following considerations:

- Imputation is not applied where no established pattern of payment exists to enable forward extrapolation. For example, a small proportion of employees paid on an ad hoc basis.
- If an employee has not yet had payment data reported and they have not been flagged for termination, it is assumed that their payment status is consistent with their previous reporting record. The previously calculated daily rate will be used to impute the existence of a payroll job for the current period.
- If an employee has no payment data for a second consecutive pay period, it is assumed that their employment has been terminated. No further forward imputation is applied.
- Imputed data remains in place until 16 weeks have elapsed, to account for the majority of lags in business reporting.
- No imputation is applied for new employees without historical payment information, until a pattern can be determined. This means that there can be a lag before a new payroll job appears in the data (after their initial pay period). The lag is longer for new jobs with employers who have less frequent payment and reporting periods. No adjustment is applied to account for this new job lag.

STP reported data can take several months to be fully complete at a specific reference date, due to infrequent and quarterly STP reporters. In August 2021, the lag between the reference and release date was extended to around 26 days to allow for the receipt of more complete data (around 90%), resulting in an imputation rate of around 10% in the latest reference week. Some periods see greater variation in reporting patterns and seasonality, which can affect the level of imputation and subsequent revisions when more complete data is received (see [Data variability and revisions \(/methodologies/weekly-payroll-jobs-methodology/week-ending-13-april-2024#data-variability-and-revisions\)](#) section for more information). In this release, imputation in the reference week was around 8%.

### Imputation retention period

From the 7 October 2021 release, the imputation retention threshold was updated from eight pay periods to 16 weeks for all jobs. As more complete data is received and historical imputation is removed, larger than usual revisions may occur in estimates around 16 weeks prior to the latest week. This is more evident during brief periods of labour market shock, which were likely to experience slight over-imputation.

### Pay frequency influence

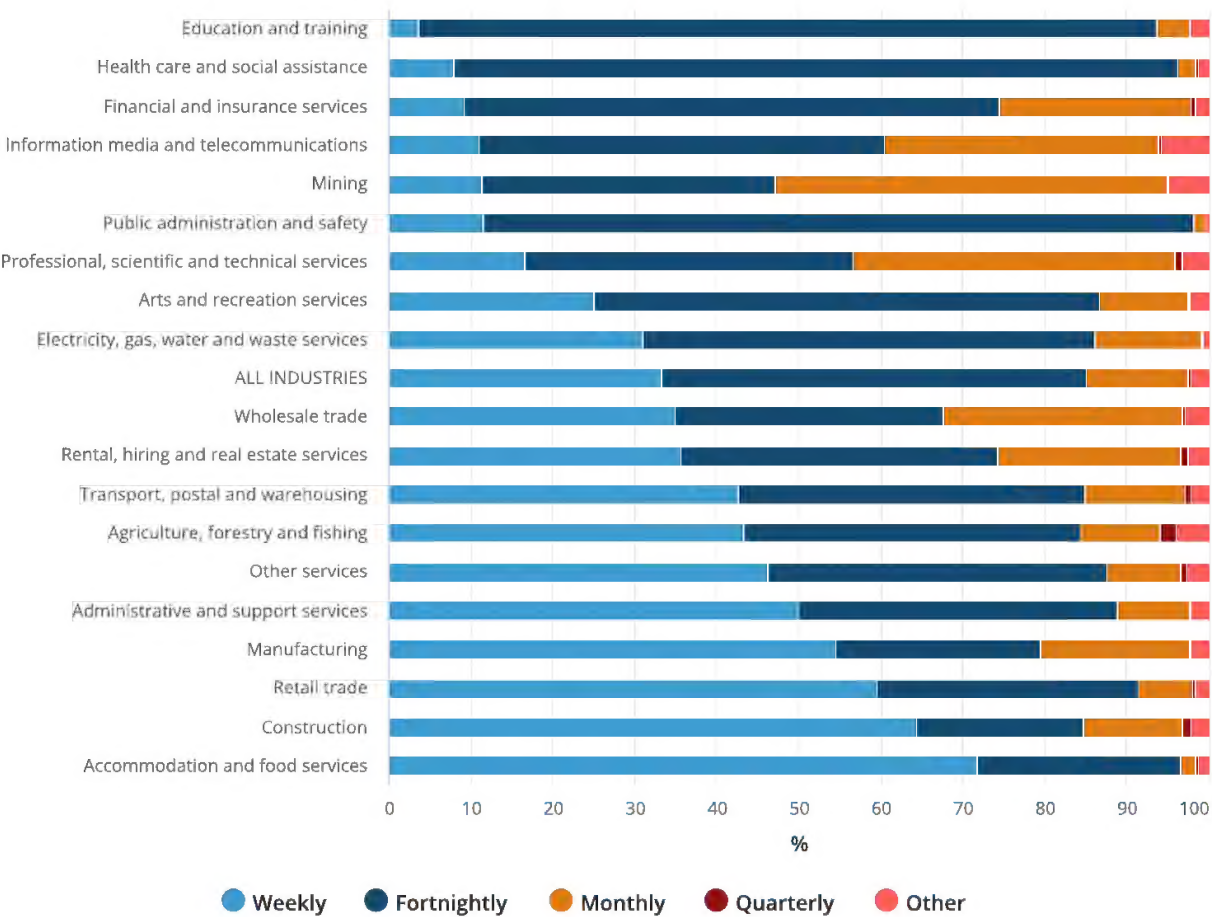
In each reference week, employer reported data is included for almost all weekly paid employees, most employees paid fortnightly and some employees paid monthly. For example, an employer with a fortnightly payroll will only report payments in alternate weeks in the STP dataset. As at the end of March 2023, the data indicated that 33% of employees are paid weekly; 52% are paid fortnightly; 12% are paid monthly; and 3% are paid quarterly or infrequently.

While a fortnightly pay frequency is the most common amongst all industries, the dominant pay frequency varies across industry (seen in the graph below), which can affect the level of imputation for each industry in any given



week.

Proportion of reported pay frequency by industry



Ranked by ascending weekly pay frequency, for the week ending 25 March 2023.

Aggregation

Once STP data are converted via the calendarisation method and imputation is applied, the data are aggregated for each week (ending Saturday) to produce total payroll jobs, which is the average of the seven days of payroll job counts.

Suppression

To protect the confidentiality of individuals, data may be subject to suppression where a small number of individuals contribute to an individual estimate. At times, a detailed index may be suppressed throughout the time series, if the quality or interpretability of an index are affected by the compilation process. For example, the effect of unknown sex on age group by sex indexes.

## Creation of indexes

Estimates are supplied as indexes to provide an indication of movements rather than level estimates. In order to compare changes over time, the week in which Australia recorded its 100th confirmed Coronavirus case (i.e. the week ending 14 March 2020) is used as the reference period for constructing the indexes and given an index value of 100.0. These indexes differ from the ABS' suite of price indexes (including the Wage Price Index) which measure changes in price over time unaffected by quality or quantity and should not be directly compared.

Indexes allow comparison of data between two points in time, the points in time can be adjacent (this week and the previous week) or many weeks apart. Movements in the index from one period to another can be expressed as either points or percentage change and these are rounded to one decimal place. The following example illustrates the method of calculating changes in index points and percentage changes between any two periods:

	Index number
Week ending 13 May 2023 for Subdivision: Education and training - Tertiary education	106.2
Less week ending 15 April 2023 for Subdivision: Education and training - Tertiary education	102.5
Change in index points	3.7
Percentage change	$3.7/102.5 \times 100 = 3.6\%$

The following example illustrates the method of calculating a recovery percentage change between any two periods, which can be useful in understanding the relative strength in payroll jobs increases at a point in time after a low point.

	Index number
National payroll jobs index for week ending 14 March 2020	100
Less National payroll jobs index for week ending 18 April 2020	91.6
Payroll jobs lost from 14 March index value (denominator)	8.4
National payroll jobs for week ending 9 January 2021	97.6
Less National payroll jobs index for week ending 18 April 2020	91.6
Recovery index points (numerator)	6.0
Recovery percentage change	$6.0/8.4 \times 100 = 71.4\%$

## Aggregate adjustments

Individual STP transactions are not amended, however aggregate levels may be adjusted at a state/territory by industry level to remove the effect of:

- reporting anomalies which are significant at the state/territory by industry level, and
- large organisation onboarding to STP reporting.

Aggregate adjustments are applied to the applicable state/territory by industry levels. The adjustments in each release are:

- calculated individually for each state/territory by industry level, and
- removed as the underlying data becomes more complete, or the adjustment is no longer required.

Currently, it is not possible to calculate individual adjustments for all output groups, hence the adjustments applied at a state/territory by industry are also applied equally to all component indexes (such as state/industry by age group or sex or employment size). Aggregate level adjustments can also affect the relative proportion of characteristics.

The effect is more pronounced around large organisation onboarding events (where they are dominant in their state/territory and industry).

**Large organisation onboarding**

The ABS updated the method used to account for large organisations onboarding STP reporting in the 8 September 2022 release. Where existing large employers commence reporting through STP for the first time, the ABS determines when the employer first appears in the dataset and adjusts underlying jobs to the start of the time series (rather than to the end of the time series). This ensures that weekly estimates best reflect change in the labour market over time through payment activities, rather than changes in the uptake of STP reporting. The updated method reduced the impact of adjustments on underlying characteristics distributions, particularly after the onboarding event, and are a step toward the future release of levels.

**Updating characteristic variables**

Weekly payroll jobs indexes are available for a combination of employer characteristics (industry, employment size and sector) and jobholder characteristics (state/territory of residential address, age, and sex). These characteristics are populated from variables found in the snapshots of the ABS Business and ATO Client Registers. These Registers are described in more detail in the [Glossary \(/methodologies/weekly-payroll-jobs-methodology/week-ending-13-april-2024#glossary\)](#) and [How data are collected \(/methodologies/weekly-payroll-jobs-methodology/week-ending-13-april-2024#how-data-are-collected\)](#) (Other data sources) sections of this release.

The vintage, frequency of update and refresh timing of these snapshots can differ.

**Employer characteristics**

**ABS Business Register snapshots**

In the 14 March 2024 release, employer characteristics of payroll jobs were updated using a December 2023 ABS Business Register (ABSBR) snapshot. These updated characteristics were applied back to the week ending 30 December 2023.

Once an employers' payroll job is allocated to an employer characteristic from the ABSBR snapshot it is held constant until the next snapshot, when missing values will be populated and existing values refreshed (if they have changed). Employers with industry and sector characteristics that can't be linked or derived from the latest ABSBR snapshot are assigned an 'unknown' category for the relevant employer characteristic. As a snapshot ages, the proportion of records with unknown industry and sector increases. Businesses with unknown employment size are categorised to 0-19 employment size, with some of these businesses being reallocated to other employment size categories with the updating of employer characteristics.

The date at which characteristics change from one snapshot to another, called 'transition points', can be visible in the levels of some indexes. Users should always exercise caution when comparing week-on-week change and index levels across transition points. The table below shows the reference periods each ABSBR snapshot applies to and identifies the transition points.

**ABS Business Register (ABSBR) snapshots and applied periods**

ABS Business Register snapshot	Reference period start	Reference period end
March 2020	Week ending 4 January 2020	Week ending 22 August 2020
March 2021	Week ending 29 August 2020	Week ending 25 December 2021
June 2022	Week ending 1 January 2022	Week ending 23 December 2023
December 2023	Week ending 30 December 2023	Present

For more detailed information on changes resulting from the latest ABSBR update, see the historical [Update of employer characteristics \(https://www.abs.gov.au/methodologies/weekly-payroll-jobs-methodology/week-ending-17-](#)



[february-2024#update-of-employer-characteristics](#)) section.

The ABS will refresh snapshots when possible to update employer characteristics and minimise the number of unknowns.

### **Determining employer characteristics of newly reported payroll jobs**

Newly reported payroll jobs are in one of two population groups (profiled and non-profiled), and the assignment of employer characteristics depends on which population group the employer falls within on the ABSBR. For non-profiled businesses (businesses with a simple structure), employer characteristics match those of the business' Australian Business Number (ABN). The remainder of payroll jobs are part of the profiled population (businesses with a complex structure). These payroll jobs are assigned to a Type of Activity Unit (TAU), and conceptual modelling is used to predict and assign suitable employer characteristics (industry, employment size and sector) to each payroll job.

### **Sector**

Employer characteristics include a public/private sector variable, the first available download being payroll jobs by selected private sector industries in the release of 7 October 2021. Private sector indexes are included for industries where the payroll jobs in the private sector are more than 80% of all payroll jobs. Industries not included in the sector tables are Electricity, gas, water and waste services; Public administration and safety; Education and training; and Health care and social assistance.

It is intended that both private and public sector by industry indexes and private and public sector by state/territory indexes will be released in the future. The current method of applying adjustments, for anomalous reporting and commencement of employer reporting through STP, does not differentiate on sector. While there is a small impact in indexes where the private sector dominates, the adjustment method requires enhancement to allow for more granular application and more accurate representation of change for both private and public sector indexes (for all industries and at state/territory levels).

### **Jobholder characteristics**

#### **Determining jobholder characteristics**

Jobholder characteristics used in these estimates (sex, age and residential state/territory) are sourced primarily from the annual ATO Client Register which reflects a historical point-in-time and has been periodically updated for Weekly Payroll Jobs. Sex can only be sourced from Client Register data. Whereas, when age and residential state/territory are not available from Client Register data, they are sourced from STP data which are received and updated weekly.

STP records whose jobholder characteristics cannot be determined from the Client Register snapshot or STP data are assigned an 'unknown' category for the relevant jobholder characteristic. As persons join the workforce or register with the ATO for the first time, the Client Register snapshot becomes increasingly outdated and the number of payroll jobs with an unknown characteristic increases. The proportions of jobholders with an unknown age and residential geography (state/territory) remain relatively small over time, as they can also be derived from STP data. However, the proportion with an unknown sex (which is only sourced from the Client Register), increases over time as the snapshot ages. The effect of the increasing number of unknowns, and level of revisions for various jobholder characteristics is explained in detail in a historical [Methods Review \(/methodologies/weekly-payroll-jobs-and-wages-australia-methodology/week-ending-12-february-2022#methods-review\)](#).

These snapshots reflect a historical point-in-time. To reduce the volatility in fluctuating characteristics, jobholder variables, once assigned, are held constant until the next ATO Client Register snapshot update. While the month and year of birth variable is held constant, the jobholder's age (as derived from month and year of birth) continues to be updated at the start of a jobholder's birth month each year.

Post application of the initial mid-2019 ATO Client Register data, there have been two updates applied to the Weekly Payroll Jobs series.

The system and processes used to produce Weekly Payroll Jobs are no longer able to accommodate ATO Client Register updates. Users are advised that as the snapshot ages, the quality of indexes involving job holder characteristics, particularly sex (which doesn't have a secondary source to support updates), will be affected by a growing proportion of 'unknowns'.

The ABS is exploring more efficient ways to produce weekly employee jobs estimates that incorporate regular updating of jobholder characteristics in the future.

### ATO Client Register snapshots updates and transition points

A mid-2019 ATO Client Register snapshot assigned the initial jobholder variables and has in the past been periodically updated. The first update, using the mid-2020 snapshot was included in the 13 April 2021 release. This was followed by an update using the mid-2021 snapshot, in the 10 March 2022 release. The table below shows the reference periods each snapshot applies to and identifies the transition points.

### Client Register snapshots used within series

Client Register snapshot	Reference period start	Reference period end
Mid-2019	Week ending 4 January 2020	Week ending 27 June 2020
Mid-2020	Week ending 4 July 2020	Week ending 26 June 2021
Mid-2021	Week ending 3 July 2021	Present

The transition point for these Client Register updates is at the change in financial year as:

- the STP reporting is financial year based, ensuring jobholder characteristics are held constant across each STP reporting year, and
- the annual ATO Client Register snapshot is taken in July each year, aligning the update point to that of the snapshot.

Some jobholder characteristics indexes have a visible change in levels at the transition point between ATO Client Register snapshots. This is particularly visible for state/territory, where changes in residential addresses from across a year will all be reflected in a single week.

As noted above, the system and processes used to produce Weekly Payroll Jobs are no longer able to accommodate ATO Client Register updates. Therefore, the mid-2021 snapshot will be the last update, while new systems and processes are being developed.

### Inclusion of unknown characteristics

STP data is linked to other information held by the ABS to derive demographic and business characteristics such as age group, sex, state/territory and industry. If a specific characteristic cannot be linked or derived, and does not appear on STP datasets, it is assigned an 'unknown' category (for that characteristic). The exception being businesses with unknown employment size which are categorised to the 0-19 employment size.

Records with 'unknown' characteristics are included in the calculation of index totals for that category. As 'total' and 'component' indexes are calculated independently, the inclusion of records with 'unknown' characteristics in a 'total' index can result in independent movement from 'component' indexes. For example, the 'total' index of Persons is calculated from the combined levels of Males, Females and 'unknown' (persons for whom a Male/Female sex cannot be determined). As a result, the Persons index can move independently from Male and Female indexes, which do not include 'unknown' persons. While the proportion of unknown characteristics vary by characteristic, their impact will be compounded in components of finer indexes (such as in State and territory by sex by age group).



## Proportion of unknown characteristics

Records with 'unknown' characteristics are excluded from the calculations of proportions included in the [Distribution of characteristics \(/statistics/labour/jobs/weekly-payroll-jobs/week-ending-13-april-2024#distribution-of-characteristics\)](#) section of the release.

The proportions of 'unknown' characteristics at mid-April 2024 are:

- almost no payroll jobs have an unknown state or territory,
  - around 0.3% of payroll jobs have an unknown age,
  - around 0.4% of payroll jobs have an unknown industry, and
  - around 9.2% of payroll jobs have an unknown sex.
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These estimates are also affected by the dynamic nature and source of data. The impact on accuracy and coherence with other ABS labour statistics are described below.

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## Accuracy

STP is a dynamic administrative data source, hence these estimates may be subject to the following sources of error:

- Conceptual misalignment - The Australian tax system is purpose-built and complex, and in some cases it is difficult to determine how a particular STP item should be used to describe impact on payroll jobs. While all care is taken, some income items are subject to this type of validity error. Coherence with other sources indicates that this has a low impact on the aggregate series.
  - Reporting error - This is likely to be present in both employee and employer information used. While only the most significant reporting errors are identified or adjusted, some reporting errors may remain. These errors are considered to have a low impact on the aggregate series given their coherence with other similar statistics.
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## Coherence

There are differences between these estimates and similar statistics produced by the ABS. When compared to other ABS sources, the change in payroll jobs in these estimates may differ due to differences in the concepts, scope and methodology used. For example, these estimates:

- contain a combination of administrative data collected for taxation purposes from employers, whereas other ABS data sources are compiled for the explicit purpose of producing statistics,
  - exclude unreported cash in hand payments in their compilation (as they are not reported through STP) which may be included in household and business surveys,
  - may include information relating to a reference week, rather than a particular point in time,
  - are not yet adjusted with respect to seasonality, unlike other Labour Force releases,
  - provide a payroll jobs measure whereby those people who hold more than one job at a time (i.e. secondary jobs) are counted in each job, whereas each person is counted once in the employed persons measure in the Labour Force survey, and
  - do not account for hours worked, hours paid for, job attachment where a payment has not been made, or jobholders temporarily stood down without pay, or employment status of employees (i.e. full time or part time), which are considerations in the Labour Force survey measures. For further information, see [Differences to Labour Force employment statistics \(/methodologies/weekly-payroll-jobs-methodology/week-ending-13-april-2024#differences-to-labour-force-employment-statistics\)](#).
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## How data are released

All estimates are presented for weeks ending on a Saturday.

## Summary of outputs

Each release contains payroll jobs indexes and percentage change movements. Estimates are available at the national, state and territory and [Australian and New Zealand Standard Industry Classification \(ANZSIC\)](https://www.abs.gov.au/ausstats/abs@.nsf/mf/1292.0) (<https://www.abs.gov.au/ausstats/abs@.nsf/mf/1292.0>) division by selected jobholder and employer characteristics. ANZSIC subdivision estimates are also available in each release, but with no jobholder or employer characteristics.

Levels of payroll jobs are not available for release. The payroll jobs index, available from 4 January 2020, provides a measure of changes in payroll jobs over time from the week ending 14 March 2020. Information on levels for jobs are best sourced from estimates of filled jobs from [Labour Account Australia](https://www.abs.gov.au/statistics/labour/labour-accounts/labour-account-australia/latest-release) ([/statistics/labour/labour-accounts/labour-account-australia/latest-release](https://www.abs.gov.au/statistics/labour/labour-accounts/labour-account-australia/latest-release)) and estimates of employed persons from [Labour Force, Australia](https://www.abs.gov.au/statistics/labour/employment-and-unemployment/labour-force-australia/latest-release) (<https://www.abs.gov.au/statistics/labour/employment-and-unemployment/labour-force-australia/latest-release>). More information is included in [Differences to Labour Force employment statistics](https://www.abs.gov.au/methodologies/weekly-payroll-jobs-methodology/week-ending-13-april-2024#differences-to-labour-force-employment-statistics) ([/methodologies/weekly-payroll-jobs-methodology/week-ending-13-april-2024#differences-to-labour-force-employment-statistics](https://www.abs.gov.au/methodologies/weekly-payroll-jobs-methodology/week-ending-13-april-2024#differences-to-labour-force-employment-statistics)).

The data underlying these estimates are revised in each release and reflected in percentage change movements and indexes. See [Data variability and revisions](https://www.abs.gov.au/methodologies/weekly-payroll-jobs-methodology/week-ending-13-april-2024#data-variability-and-revisions) ([/methodologies/weekly-payroll-jobs-methodology/week-ending-13-april-2024#data-variability-and-revisions](https://www.abs.gov.au/methodologies/weekly-payroll-jobs-methodology/week-ending-13-april-2024#data-variability-and-revisions)) for more detail.

## Time series estimates

The estimates are presented as an original series only. Seasonally adjusted and trend estimates are not yet available. A number of years of stable data will be required before seasonal patterns can be observed and adjusted for.

The calendarisation and imputation methodologies applied to the estimates account for calendar related variations, such as the number of days in a month, and different payment frequencies.

## Privacy and confidentiality

Legislative requirements to ensure privacy and secrecy of this data have been followed. Only those authorised under the Australian Bureau of Statistics Act 1975 have been allowed to view data about any particular firm in conducting these analyses. In accordance with the Census and Statistics Act 1905, results have been confidentialised to ensure that they are not likely to enable identification of a particular person or organisation.

All personal information is handled in accordance with the Australian Privacy Principles contained in the Privacy Act 1988. For more information, see [ABS Privacy](https://www.abs.gov.au/about/legislation-and-policy/privacy/privacy-abs) ([/about/legislation-and-policy/privacy/privacy-abs](https://www.abs.gov.au/about/legislation-and-policy/privacy/privacy-abs)).

## More information

For more information on this methodology email [labour.statistics@abs.gov.au](mailto:labour.statistics@abs.gov.au) (<mailto:labour.statistics@abs.gov.au>).

## Data variability and revisions

Weekly Payroll Jobs estimates are derived from data collected via the STP system, which effectively supports employer reporting obligations and ATO operational requirements through enabled software.

STP was not primarily designed to support the production of statistics, hence some inherent characteristics contribute to variability in the estimates and revisions between releases.

Payroll jobs estimates (including percentage change movements and indexes) are revised in each release. Revisions primarily relate to the receipt of more complete STP data over time and have the greatest impact on the most

recently reported information. Users should exercise caution when focusing on change in the most recent weeks of data, as this period sees greater levels of revision in subsequent releases. Over time, as more employer-reported data is received, the size of revisions usually decreases.

The ABS has assessed the impact of revisions across the data series and will not be applying revisions prior to January 2022, unless in exceptional circumstances, from the September 2023 release.

Aside from more complete reporting there are other factors which can influence the size, timing, duration and specificity of revisions.

## Seasonality

These estimates are presented as an 'original' data series, and do not include seasonally adjusted or trend data time series found in other labour statistics releases (e.g. Labour Force).

STP is a relatively new program (and data source). Generally, three to five years of data are required before seasonally adjusted data can be produced, hence it is not yet possible to produce a seasonally adjusted series (with seasonal elements removed) or trend series (with both the seasonal elements and irregular fluctuations removed). This means that variations in these estimates may reflect seasonal changes in the labour market in addition to other changes in the economy.

Seasonal characteristics may be seen:

- ahead of the Christmas period, where considerable labour market activity in a range of industries increases payroll jobs, across school holiday periods, where some industries experience lower business activity. This is particularly pronounced in the holiday period after Christmas, resulting in a decrease in the national payroll jobs series,
- in industries where there is more pronounced peaks and troughs in employment, such as the Agriculture, forestry and fishing and the Education and training industry,
- around the end of the financial year, when employer reporting is more variable as employers finalise their year to date employee earnings information, and of the financial year is reset in payroll systems.

As seasonal characteristics are further identified in these data, this list will be expanded.

## Re-submission of historical pay periods

The dynamic nature of STP data can result in revisions to indexes when STP-enabled employers re-submit payroll data for historical pay periods (including prior financial years). When re-submission results in an update to payroll jobs, revisions across the index time series may be observed.

## Revisions in sub-populations

The size of revisions and the period over which they apply can vary between indexes. Some component indexes are subject to higher than usual levels of revision, over a longer period. For example, the employment size indexes show both a higher incidence and duration of revision. This is most noticeable in the small employers group (those with under 20 employees). Characteristics which contribute to revisions in the estimates for this group are:

- higher levels of reporting seasonality,
- a greater incidence of longer payment periods (such as quarterly), and
- graduated STP onboarding (the effect of which was more prevalent up to July 2021).

The ABS is currently investigating methods to reduce the future level of revisions in this series. In the interim, to provide more stability at the end point of all employment size indexes, a month lag in the reference week is in place.



## **Acknowledgement of source**

The results of these studies are based, in part, on ABR data supplied by the Registrar to the ABS under A New Tax System (Australian Business Number) Act 1999 and tax data supplied by the ATO to the ABS under the Taxation Administration Act 1953. These require that such data is only used for the purpose of carrying out functions of the ABS. No individual information collected under the Census and Statistics Act 1905 is provided back to the Registrar or ATO for administrative or regulatory purposes. Any discussion of data limitations or weaknesses is in the context of using the data for statistical purposes and is not related to the ability of the data to support the ABR or ATO's core operational requirements.

Legislative requirements to ensure privacy and secrecy of this data have been followed. Only those authorised under the Australian Bureau of Statistics Act 1975 have been allowed to view data about any particular firm in conducting these analyses. In accordance with the Census and Statistics Act 1905, results have been confidentialised to ensure that they are not likely to enable identification of a particular person or organisation.

The ABS would like to acknowledge the critical support from the ATO in enabling the ABS to produce these statistics.

## **Differences to labour force employment statistics**

The Weekly Payroll Jobs estimates are a complementary insight to Labour Force statistics on employment and unemployment, which provide a longstanding and comprehensive view of the Labour market.

The two releases generally show similar national movement in jobs and employment over time, however at the state/territory and industry levels, the changes can be more pronounced. The differences in concepts, scope and methodology used to produce these statistics can affect their interpretation as economic measures. Some factors that explain differences at the state/territory and industry levels include:

- Real world factors - scope of STP reporting, multiple jobholding and seasonality, and
- Measurement factors - variability in sampling, reporting and classification.

The following key differences should be considered when comparing these statistics

	Weekly Payroll Jobs	Labour Force statistics
<b>Focus of the statistics</b>	Jobs.	People
	Around 12 million payroll jobs for which a payment was reported to the ATO through STP. <sup>(a)</sup>	All usually resident civilian people aged 15 and over (around 22 million people, of whom 14 million are employed)
<b>Coverage</b>	Almost all large employers (with 20 or more employees) and eligible small employers are reporting through STP.  Coverage increased steadily from January 2020 to July 2021 as employers started reporting through STP.	Statistics are based on a large survey sample of around 50,000 people responding every month.
<b>Revisions</b>	Revised every release as payroll periods are completed (with imputed data replaced with actual data when received). This ensures comparability over time.  Revisions to jobholder and employer characteristics from periodic updates <sup>(b)</sup>	Small revisions every 3 months, aligned with new population statistics.
<b>Types of employment</b>	Employee jobs which are paid through a STP-reported payroll.  Also includes a small number of jobs for non-employees who are paid through STP-reported payrolls.	All employed people, including: Employees (including Owner managers of incorporated enterprises), Owner managers of unincorporated enterprises;  Contributing family workers.
<b>Whether paid</b>	Only includes payroll jobs where a payment was reported to the ATO through STP or there is an established payment pattern.  Each job is counted separately, irrespective of whether it is worked by a multiple jobholder. People who work multiple jobs will be counted multiple times.	Includes all employed people who were paid or who had a job but weren't paid (on unpaid leave, temporarily stood down without pay, etc.).  Each person is only counted once, and job characteristics (other than hours) relate to a person's main job.
<b>Multiple job holding</b>	Industry is identified for each job, not just the main job and the level of multiple jobholding can vary between industries.	Around 6% of employed people are multiple jobholders, particularly young people.
<b>Location</b>	Residence of the jobholder, based on address held by the ATO.	Place of usual residence of people at the time of the survey.
<b>Industry</b>	Determined from the business' industry on the ABS Business Register. Industry coding is applied to all jobs held by multiple jobholders.	Self-reported by the person at the time of the survey. Industry is coded for the main job only.
<b>Time series</b>	Original index series. No seasonally adjusted or trend series are available yet.	Original and seasonally adjusted (trend is currently suspended, during the COVID-19 period)

a. A compositional breakdown of payroll jobs can be found in [Characteristics spotlight: 2022 \(/articles/characteristics-spotlight-2022\)](#).

b. The update of jobholder and employer characteristics can be found in [How data are processed \(/methodologies/weekly-payroll-jobs-methodology/week-ending-13-april-2024#how-data-are-processed\)](#).

Labour Force analysis of employment versus payroll jobs up to August 2020 can be found in [Strong employment growth for non-employees \(/articles/strong-employment-growth-non-employees\)](#). More information on the differences between Weekly Payroll Jobs estimates and similar ABS statistics are detailed in the Coherence section of [How data are processed \(/methodologies/weekly-payroll-jobs-methodology/week-ending-13-april-2024#how-data-are-processed\)](#).

## History of changes

A timeline of methodological changes are listed below for easy reference.

### By release date

Week ending 17 February 2024

- [Update of employer characteristics \(/methodologies/weekly-payroll-jobs-methodology/week-ending-17-february-2024#update-of-employer-characteristics\)](#) - ABS Business Register snapshot update to industry, employment size and sector variables

Week ending 15 July 2023

- [Withdrawal of wages and sub-state geography estimates \(/statistics/labour/jobs/weekly-payroll-jobs/week-ending-15-july-2023#changes-in-this-release\)](#) - wages and sub-state geography indexes removed

Week ending 11 February 2023

- [Update to STP processes \(/methodologies/weekly-payroll-jobs-and-wages-australia-methodology/week-ending-11-february-2023#update-to-stp-processes\)](#) - changes to the processes supporting the use of STP data for statistical purposes

Week ending 15 October 2022

- [Update of employer characteristics \(https://www.abs.gov.au/methodologies/weekly-payroll-jobs-and-wages-australia-methodology/week-ending-15-october-2022#update-of-employer-characteristics\)](#) - ABS Business Register snapshot update to industry, employment size and sector variables

Week ending 12 February 2022

- Update of jobholder characteristics - revisions to all sex, age and geography indexes as noted in [Methods review \(/methodologies/weekly-payroll-jobs-and-wages-australia-methodology/week-ending-12-february-2022#methods-review\)](#)

Week ending 13 November 2021

- Update of employer characteristics - refinement of Job-TAU allocation process as noted in [Methods review \(/methodologies/weekly-payroll-jobs-and-wages-australia-methodology/week-ending-13-november-2021#methods-review\)](#)

Week ending 11 September 2021

- [Update to imputation retention \(/methodologies/weekly-payroll-jobs-and-wages-australia-methodology/week-ending-11-september-2021#methods-review\)](#) - the imputation retention threshold updated from 8 pay periods to 16 weeks

Week ending 31 July 2021

- [Change in lag between reference week and release date \(/methodologies/weekly-payroll-jobs-and-wages-australia-methodology/week-ending-31-july-2021#how-data-are-processed\)](#) - reducing imputation in the latest weeks of data, as noted in the Imputation section

Week ending 19 June 2021

- [Update of employer characteristics \(/methodologies/weekly-payroll-jobs-and-wages-australia-methodology/week-ending-19-june-2021#methods-review\)](#) - ABS Business Register snapshot update to industry and employment size variables

Week ending 10 April 2021

- [Historical imputation \(/methodologies/weekly-payroll-jobs-and-wages-australia-methodology/week-ending-10-april-2021#how-data-are-processed\)](#) - period over which historical imputation is removed for terminated employees changed from 3 to 8 pay periods

Week ending 27 March 2021

- [Update of jobholder characteristics \(/methodologies/weekly-payroll-jobs-and-wages-australia-methodology/week-ending-27-march-2021#methods-review\)](#) - Client Register snapshot update to sex, age and geography variables

Week ending 30 January 2021

- [Imputation update \(/methodologies/weekly-payroll-jobs-and-wages-australia-methodology/week-ending-30-january-2021#methods-review\)](#) - to deliver a reduced magnitude of future revisions, particularly in the most recent week's data

Week ending 16 January 2021

- [Age derivation update \(/methodologies/weekly-payroll-jobs-and-wages-australia-methodology/week-ending-16-](#)



[january-2021#data-limitations-and-revisions](#)) - a person is aged at the start of their birthday month instead of redefining age each reference week

Week ending 2 January 2021

- Update of characteristics variables - Employers with unknown industry included in estimates, as noted in [Data limitations and revisions \(/methodologies/weekly-payroll-jobs-and-wages-australia-methodology/week-ending-2-january-2021#data-limitations-and-revisions\)](#)

Week ending 14 November 2020

- [Week on week revisions \(/methodologies/weekly-payroll-jobs-and-wages-australia-methodology/week-ending-14-november-2020#data-limitations-and-revisions\)](#) - persons aged under 15 years excluded from the under 20s age group

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## Glossary

### Show all

#### Accrual basis

Recording wages when they are earned, accrued or incurred regardless of when payment is made or received.

#### Australian Bureau of Statistics Business Register

A register of all Australian businesses and organisations maintained by the Australian Bureau of Statistics (ABS) for the purpose of producing statistical frames and business demography outputs. It contains identifying and classificatory data for each business and organisation.

Information to populate the ABS Business Register is largely sourced from the Australian Business Register.

The ABS Business Register consists of two subpopulations, the profiled population and the non-profiled population. The ABS Business Register uses an economic units model to describe the characteristics of businesses and the structural relationships between related businesses.

#### Australian Business Number

A unique identifier. To be entitled to an Australian Business Number (ABN), an organisation must be one or more of the following:

- a company registered under the Corporations Act 2001
- an entity carrying on an enterprise in Australia
- a government entity
- a non-profit sub-entity for Goods and Services Tax purposes
- a superannuation fund.

A non-resident entity may be entitled to an ABN if they are carrying on an enterprise in Australia and/or, in the course of carrying on an enterprise, the entity makes sales that are connected with Australia.

#### Australian Business Register

The data store containing details about businesses and organisations that have registered for an Australian Business Number. More information can be found on the [ABR website \(https://abr.gov.au/\)](https://abr.gov.au/).

## **Australian Tax Office person-level Client Register**

A register of persons that have interacted with the Australian Tax Office (ATO) and have been issued with an Australian Tax File Number (TFN). The ATO person-level Client Register comprises demographic information such as sex, month and year of birth, and state/territory of residential address.

### **Cash basis**

Recording the wage payment in the pay period when the payment was received by the employee.

### **Commencement and termination dates**

Commencement and termination dates associated with each job as reported through Single Touch Payroll.

### **Employee**

Persons who work for a private or public sector employer, where the employee has received payment in the reference week through Single Touch Payroll (STP) enabled software and reported to the Australian Taxation Office (ATO).

### **Employer**

An organisation with an Australian Business Number that provides employment income to one or more people, and reports through the ATO STP system.

### **Enterprise group**

An institutional unit covering all the operations within Australia's economic territory of legal entities under common control. Control is defined in Corporations legislation. Majority ownership is not required for control to be exercised. An enterprise group may have one or more TAUs.

### **Geography**

State/territory based on residential address as sourced from either the ATO Client Register or STP data.

### **Industry**

A homogenous grouping of economic activities undertaken to produce goods and services. The [Australian and New Zealand Standard Industrial Classification \(https://www.abs.gov.au/ausstats/abs@.nsf/mf/1292.0\)](https://www.abs.gov.au/ausstats/abs@.nsf/mf/1292.0) is used to classify an entity to an industry based on its dominant activity.

### **Industry division**

The broadest grouping of industries within the Australian and New Zealand Standard Industrial Classification. The main purpose of the industry division level is to provide a limited number of categories, which give a broad overall picture of the economy. There are 19 mutually exclusive divisions. For more information see the [Australian and New Zealand Standard Industrial Classification \(https://www.abs.gov.au/ausstats/abs@.nsf/mf/1292.0\)](https://www.abs.gov.au/ausstats/abs@.nsf/mf/1292.0).

### **Industry subdivision**

The second broadest grouping of industries within the Australian and New Zealand Statistical Industrial Classification. Industry subdivisions are built up from the industry groups which, in turn, are built up from industry classes. For more information see the [Australian and New Zealand Standard Industrial Classification \(https://www.abs.gov.au/ausstats/abs@.nsf/mf/1292.0\)](https://www.abs.gov.au/ausstats/abs@.nsf/mf/1292.0).

### **Job**

See payroll job.

### **Non-profiled population**

The vast majority of businesses included on the ABSBR are in the non-profiled population. Most of these businesses have simple structures that are suitable for ABS statistical purposes at the Australian Business Number (ABN) level. For the non-profiled population, one ABN equates to one business.

### **Not available (NA)**

Statistic is not available. This can be to protect the confidentiality of data providers or to prevent misinterpretation of statistics due to poor quality.

### **Owner-manager of unincorporated enterprises (OMUE)**

A person who operates their own unincorporated enterprise, which does not possess a separate legal identity to that of its owner(s), or engages independently in a profession or trade.

OMUEs can also be referred to as self-employed. Owner managers of unincorporated enterprises are not included in these estimates as they are not in scope of STP-enabled software reporting to the ATO.

Unincorporated enterprises are further defined in the Type of Legal Organisation (TOLO) classification section of the [Standard Economic Sector Classifications of Australia \(SESCA\) release \(/statistics/classifications/standard-economic-sector-classifications-australia-sesca/latest-release#type-of-legal-organisation-tolo-classification\)](#).

### **Payroll job**

A payroll job is a relationship between an employee and their employing enterprise, where the employee is paid in the reference week through STP-enabled payroll or accounting software and reported to the ATO. Where an employee is paid other than weekly, the established payment pattern is used to identify jobs in weeks outside the payment week.

### **Profiled population**

For a small number of businesses, the ABN unit is not suitable for ABS economic statistics purposes and the ABS maintains its own economic units structure through direct contact with businesses. These businesses constitute the profiled population and are represented by Type of Activity Units (TAUs). This population consists of large, complex and diverse groups of businesses (known as enterprise groups).

### **Public/Private sector**

The Public/Private classification divides the economy into two sectors: Public (government units and units controlled by government); and Private (all other units). For more information, see the [Standard Economic Sector Classifications of Australia \(SESCA\) \(/statistics/classifications/standard-economic-sector-classifications-australia-sesca/latest-release#\)](#) release.

### **Single Touch Payroll**

The Single Touch Payroll (STP) system sends taxation and superannuation information from a business' STP-enabled payroll or accounting software to the ATO as a business runs its payroll.

### **Sex**

Self reported sex (i.e. male/ female) of a person as reported through the ATO taxation system. "Unknown" is assigned where sex cannot be determined from the ATO taxation data (e.g. as persons join the workforce or register with the ATO for the first time) and should not be confused with a person choosing to report a sex other than male or female. Persons with 'unknown' sex are only included in the calculation of All persons indexes and do not contribute to male or female indexes, which results in an inherent and unavoidable underestimate in those indexes. For more information see the Updating characteristics variables section of [How data are processed \(/methodologies/weekly-payroll-jobs-methodology/week-ending-13-april-2024#how-data-are-processed\)](#).



## Type of activity unit (TAU)

A TAU consists of one or more business entities, sub entities or branches of a business that can be grouped according to production activity, and can report a minimum set of data items. TAUs are classified according to the industry of their main activity. The relationship between TAUs and their associated legal entities (ABNs) may be one-to-one, many-to-one, or one-to-many.

## Type of legal organisation

All legal entities on the ABS Business Register are classified according to their type of legal organisation, of which there are three types:

- incorporated private sector entities
- unincorporated private sector entities
- public sector entities.

The type of legal organisation indicates whether a business is part of the private or public sector and the type of ownership structure. For more information see the [Standard Economic Sector Classifications of Australia \(SESCA\) release \(/statistics/classifications/standard-economic-sector-classifications-australia-sesca/latest-release#type-of-legal-organisation-to-lo-classification\)](#).

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## Abbreviations

### Show all

ABN	Australian Business Number
ABR	Australian Business Register
ANZSIC	Australian and New Zealand Standard Industrial Classification
ASGS	Australian Statistical Geography Standard
ATO	Australian Taxation Office
FBT	fringe benefits tax
NA	Not Available
pts	Index points
STP	Single Touch Payroll
TFN	Tax File Number